

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

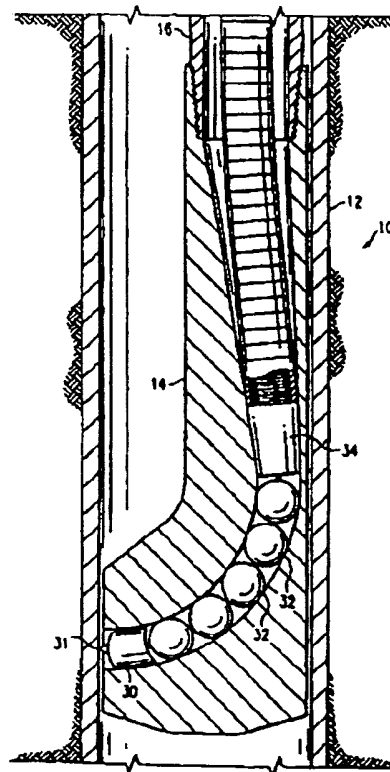
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : <b>E21B 7/08</b>	<b>A1</b>	(11) International Publication Number: <b>WO 00/50727</b> (43) International Publication Date: <b>31 August 2000 (31.08.00)</b>
(21) International Application Number: <b>PCT/US00/04332</b> (22) International Filing Date: <b>18 February 2000 (18.02.00)</b> (30) Priority Data: <b>09/256,322</b> <b>23 February 1999 (23.02.99)</b> <b>US</b> (71) Applicant: <b>LTI JOINT VENTURES [US/US]; 3610 Highway 158 East, Midland, TX 79702 (US).</b> (72) Inventors: <b>BELEW, David, A.; 2314 South County Road 1120, Midland, TX 79706 (US). BELEW, Barry; 4223 Clover Street, Odessa, TX 79762 (US).</b> (74) Agent: <b>JUDSON, David, H.; Hughes &amp; Luce, L.L.P., Street 2800, 1717 Main Street, Dallas, TX 75210 (US).</b>	(81) Designated States: <b>AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</b>  <b>Published</b> <i>With international search report.</i>	

(54) Title: **HORIZONTAL DRILLING METHOD AND APPARATUS**

## (57) Abstract

The objects of the invention are provided using a method for horizontal drilling in which a shoe (14) having an elbow-shaped cavity (20) therein is lowered to a selected point. An explosive charge (30) is placed at the far end of the shoe (14) adjacent to the well casing (12). Impact transferring means (32) are positioned between the explosive charge (30) and the vertical portion of the well above the shoe (14). An impact is struck on the surface of the transfer means (32) to cause an impact-type detonator (31) to discharge, causing the explosive charge (30) to discharge. This perforates the casing (12) of the well at the tip of the shoe (14). The shoe (14) and the tubing (16) above it are then cleared and a hydraulic drilling device (64) is inserted into the shoe (14). The shoe (14) guides the hydraulic drilling device (64) into place and high pressure liquid is pumped through the hydraulic device (64) which extends through the perforation in the well casing into the earth's strata.



BEST AVAILABLE COPY